



#3

SEQUENCE LISTING

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 KENT, Rachel B.
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<120> ITI-D1 KUNITZ DOMAIN MUTANTS AS nHE INHIBITORS

<130> LEY=1B

<140> 10/038,722

<141> 2002-01-08

<150> US 08/849,406

<151> 1999-07-21

<150> PCT/US95/16349

<151> 1995-12-15

<150> US 08/358,160

<151> 1994-12-16

<160> 129

<170> PatentIn version 3.1

<210> 1

<211> 276

<212> DNA

<213> Artificial Sequence

<220>

<223> IIIsp::bpti::mautreIII (initial fragment)

<400> 1

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gatttctgtc tcgagccacc atacactggg cctgcaaag cgegcacat cgcgtatttc 120

tacaatgcta aagcaggcct gtgccagacc tttgtatacg gtggttgccg tgctaagcgt 180

aacaacttta aatcggccga agattgcatg cgtacctgcg gtggcgccgc tgaaactggt 240

gaaagttggt tagcaaaacc ccatacagaa aattca 276

<210> 2

<211> 92

<212> PRT

<213> Artificial Sequence

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<223> IIIsp::bpti::mautreIII (initial fragment)

<400> 2

Met Lys Lys Leu Leu Phe Ala Ile Pro Leu Val Val Pro Phe Tyr Ser
 1 5 10 15

Gly Ala Arg Pro Asp Phe Cys Leu Glu Pro Pro Tyr Thr Gly Pro Cys
 20 25 30

Lys Ala Arg Ile Ile Arg Tyr Phe Tyr Asn Ala Lys Ala Gly Leu Cys
 35 40 45

Gln Thr Phe Val Tyr Gly Gly Cys Arg Ala Lys Arg Asn Asn Phe Lys
 50 55 60

Ser Ala Glu Asp Cys Met Arg Thr Cys Gly Gly Ala Ala Glu Thr Val
 65 70 75 80

Glu Ser Cys Leu Ala Lys Pro His Thr Glu Asn Ser
 85 90

<210> 3
 <211> 285
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<220>
 <223> IIIsp::itiDl::mature III fusion gene

<400> 3
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 tataatggta catccatggc ctgtgagact ttccagtacg gcggctgcat gggcaacggt 180
 aacaacttcg tcacagaaaa ggagtgtctg cagacctgcc gaactgtggg cgccgctgaa 240
 actgttgaaa gttgttttagc aaaaccccat acagaaaatt cattt 285

<210> 4
 <211> 95
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> IIIsp::itiDl::mature III fusion gene

<400> 4

Met Lys Lys Leu Leu Phe Ala Ile Pro Leu Val Val Pro Phe Tyr Ser
 1 5 10 15

Gly Ala Lys Glu Asp Ser Cys Gln Leu Gly Tyr Ser Ala Gly Pro Cys
 20 25 30

Met Gly Met Thr Ser Arg Tyr Phe Tyr Asn Gly Thr Ser Met Ala Cys
 35 40 45

Glu Thr Phe Gln Tyr Gly Gly Cys Met Gly Asn Gly Asn Asn Phe Val
 50 55 60

Thr Glu Lys Glu Cys Leu Gln Thr Cys Arg Thr Val Gly Ala Ala Glu
 65 70 75 80

Thr Val Glu Ser Cys Leu Ala Lys Pro His Thr Glu Asn Ser Phe
 85 90 95

<210> 5
 <211> 58
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 <223> Consensus Kunitz domain

<400> 5

Arg Pro Asp Phe Cys Leu Leu Pro Ala Glu Thr Gly Pro Cys Arg Ala
 1 5 10 15

Met Ile Pro Arg Phe Tyr Tyr Asn Ala Lys Ser Gly Lys Cys Glu Pro
 20 25 30

Phe Ile Tyr Gly Gly Cys Gly Gly Asn Ala Asn Asn Phe Lys Thr Glu
 35 40 45

Glu Glu Cys Arg Arg Thr Cys Gly Gly Ala
 50 55

<210> 6
 <211> 58
 <212> PRT
 <213> Bos Taurus

<400> 6

Arg Pro Asp Phe Cys Leu Glu Pro Pro Tyr Thr Gly Pro Cys Lys Ala
 1 5 10 15

Arg Ile Ile Arg Tyr Phe Tyr Asn Ala Lys Ala Gly Leu Cys Gln Thr
 20 25 30

Phe Val Tyr Gly Gly Cys Arg Ala Lys Arg Asn Asn Phe Lys Ser Ala
 35 40 45

Glu Asp Cys Met Arg Thr Cys Gly Gly Ala
 50 55

<210> 7
 <211> 58
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Epi-HNE-1

<400> 7

Arg Pro Asp Phe Cys Leu Glu Pro Pro Tyr Thr Gly Pro Cys Ile Ala
 1 5 10 15

Phe Phe Pro Arg Tyr Phe Tyr Asn Ala Lys Ala Gly Leu Cys Gln Thr
 20 25 30

Phe Val Tyr Gly Gly Cys Met Gly Asn Gly Asn Asn Phe Lys Ser Ala
 35 40 45

Glu Asp Cys Met Arg Thr Cys Gly Gly Ala
 50 55

<210> 8
 <211> 62
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Epi-HNE-2

<400> 8

Glu Ala Glu Ala Arg Pro Asp Phe Cys Leu Glu Pro Pro Tyr Thr Gly
 1 5 10 15

Pro Cys Ile Ala Phe Phe Pro Arg Tyr Phe Tyr Asn Ala Lys Ala Gly
 20 25 30

Leu Cys Gln Thr Phe Val Tyr Gly Gly Cys Met Gly Asn Gly Asn Asn
 35 40 45

Phe Lys Ser Ala Glu Asp Cys Met Arg Thr Cys Gly Gly Ala
 50 55 60

<210> 9
 <211> 58
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> EpiNE7

<400> 9

Arg Pro Asp Phe Cys Leu Glu Pro Pro Tyr Thr Gly Pro Cys Val Ala
 1 5 10 15

Met Phe Pro Arg Tyr Phe Tyr Asn Ala Lys Ala Gly Leu Cys Gln Thr
 20 25 30

Phe Val Tyr Gly Gly Cys Met Gly Asn Gly Asn Asn Phe Lys Ser Ala
 35 40 45

Glu Asp Cys Met Arg Thr Cys Gly Gly Ala
 50 55

<210> 10
 <211> 58
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> EpiNE3

<400> 10

Arg Pro Asp Phe Cys Leu Glu Pro Pro Tyr Thr Gly Pro Cys Val Gly
 1 5 10 15

Phe Phe Ser Arg Tyr Phe Tyr Asn Ala Lys Ala Gly Leu Cys Gln Thr
 20 25 30

Phe Val Tyr Gly Gly Cys Met Gly Asn Gly Asn Asn Phe Lys Ser Ala
 35 40 45

Glu Asp Cys Met Arg Thr Cys Gly Gly Ala
 50 55

<210> 11
 <211> 58
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<220>
 <223> EpiNE6

<400> 11

Arg Pro Asp Phe Cys Leu Glu Pro Pro Tyr Thr Gly Pro Cys Val Gly
 1 5 10 15

Phe Phe Gln Arg Tyr Phe Tyr Asn Ala Lys Ala Gly Leu Cys Gln Thr
 20 25 30

Phe Val Tyr Gly Gly Cys Met Gly Asn Gly Asn Asn Phe Lys Ser Ala
 35 40 45

Glu Asp Cys Met Arg Thr Cys Gly Gly Ala
 50 55

<210> 12
 <211> 58
 <212> PRT
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<220>
 <223> EpiNE4

<400> 12

Arg Pro Asp Phe Cys Leu Glu Pro Pro Tyr Thr Gly Pro Cys Val Ala
 1 5 10 15

Ile Phe Pro Arg Tyr Phe Tyr Asn Ala Lys Ala Gly Leu Cys Gln Thr
 20 25 30

Phe Val Tyr Gly Gly Cys Met Gly Asn Gly Asn Asn Phe Lys Ser Ala
 35 40 45

Glu Asp Cys Met Arg Thr Cys Gly Gly Ala
 50 55

<210> 13
 <211> 58
 <212> PRT
 <213> Artificial Sequence

<220>

<223> EpiNE8

<400> 13

Arg Pro Asp Phe Cys Leu Glu Pro Pro Tyr Thr Gly Pro Cys Val Ala
1 5 10 15

Phe Phe Lys Arg Ser Phe Tyr Asn Ala Lys Ala Gly Leu Cys Gln Thr
20 25 30

Phe Val Tyr Gly Gly Cys Met Gly Asn Gly Asn Asn Phe Lys Ser Ala
35 40 45

Glu Asp Cys Met Arg Thr Cys Gly Gly Ala
50 55

<210> 14

<211> 58

<212> PRT

<213> Artificial Sequence

<220>

<223> EpiNE5

<400> 14

Arg Pro Asp Phe Cys Leu Glu Pro Pro Tyr Thr Gly Pro Cys Ile Ala
1 5 10 15

Phe Phe Gln Arg Tyr Phe Tyr Asn Ala Lys Ala Gly Leu Cys Gln Thr
20 25 30

Phe Val Tyr Gly Gly Cys Met Gly Asn Gly Asn Asn Phe Lys Ser Ala
35 40 45

Glu Asp Cys Met Arg Thr Cys Gly Gly Ala
50 55

<210> 15

<211> 58

<212> PRT

<213> Artificial Sequence

<220>

<223> EpiNE2

<400> 15

Arg Pro Asp Phe Cys Leu Glu Pro Pro Tyr Thr Gly Pro Cys Ile Ala
1 5 10 15

Phe Val Tyr Gly Gly Cys Met Gly Asn Gly Asn Asn Phe Val Thr Glu
35 40 45

Lys Asp Cys Leu Gln Thr Cys Arg Gly Ala
50 55

<210> 18
<211> 58
<212> PRT
<213> Artificial Sequence

<220>
<223> MUTT26A

<400> 18

Arg Pro Asp Phe Cys Gln Leu Gly Tyr Ser Ala Gly Pro Cys Val Ala
1 5 10 15

Met Phe Pro Arg Tyr Phe Tyr Asn Gly Ala Ser Met Ala Cys Gln Thr
20 25 30

Phe Val Tyr Gly Gly Cys Met Gly Asn Gly Asn Asn Phe Val Thr Glu
35 40 45

Lys Asp Cys Leu Gln Thr Cys Arg Gly Ala
50 55

<210> 19
<211> 58
<212> PRT
<213> Artificial Sequence

<220>
<223> MUTQE

<400> 19

Arg Pro Asp Phe Cys Gln Leu Gly Tyr Ser Ala Gly Pro Cys Val Ala
1 5 10 15

Met Phe Pro Arg Tyr Phe Tyr Asn Gly Thr Ser Met Ala Cys Glu Thr
20 25 30

Phe Val Tyr Gly Gly Cys Met Gly Asn Gly Asn Asn Phe Val Thr Glu
35 40 45

Lys Asp Cys Leu Gln Thr Cys Arg Gly Ala
50 55

<210> 20

<211> 58
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> MUT1619

<400> 20

Arg Pro Asp Phe Cys Gln Leu Gly Tyr Ser Ala Gly Pro Cys Val Gly
 1 5 10 15

Met Phe Ser Arg Tyr Phe Tyr Asn Gly Thr Ser Met Ala Cys Gln Thr
 20 25 30

Phe Val Tyr Gly Gly Cys Met Gly Asn Gly Asn Asn Phe Val Thr Glu
 35 40 45

Lys Asp Cys Leu Gln Thr Cys Arg Gly Ala
 50 55

<210> 21
 <211> 58
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> ITI-D1E7

<400> 21

Lys Glu Asp Ser Cys Gln Leu Gly Tyr Ser Ala Gly Pro Cys Val Ala
 1 5 10 15

Met Phe Pro Arg Tyr Phe Tyr Asn Gly Thr Ser Met Ala Cys Glu Thr
 20 25 30

Phe Gln Tyr Gly Gly Cys Met Gly Asn Gly Asn Asn Phe Val Thr Glu
 35 40 45

Lys Asp Cys Leu Gln Thr Cys Arg Gly Ala
 50 55

<210> 22
 <211> 58
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> AMINO1

<400> 22

Lys Glu Asp Phe Cys Gln Leu Gly Tyr Ser Ala Gly Pro Cys Val Ala
 1 5 10 15

Met Phe Pro Arg Tyr Phe Tyr Asn Gly Thr Ser Met Ala Cys Glu Thr
 20 25 30

Phe Gln Tyr Gly Gly Cys Met Gly Asn Gly Asn Asn Phe Val Thr Glu
 35 40 45

Lys Asp Cys Leu Gln Thr Cys Arg Gly Ala
 50 55

<210> 23

<211> 58

<212> PRT

<213> Artificial Sequence

<220>

<223> AMINO2

<400> 23

Lys Pro Asp Ser Cys Gln Leu Gly Tyr Ser Ala Gly Pro Cys Val Ala
 1 5 10 15

Met Phe Pro Arg Tyr Phe Tyr Asn Gly Thr Ser Met Ala Cys Glu Thr
 20 25 30

Phe Gln Tyr Gly Gly Cys Met Gly Asn Gly Asn Asn Phe Val Thr Glu
 35 40 45

Lys Asp Cys Leu Gln Thr Cys Arg Gly Ala
 50 55

<210> 24

<211> 58

<212> PRT

<213> Artificial Sequence

<220>

<223> MUTP1

<400> 24

Arg Pro Asp Phe Cys Gln Leu Gly Tyr Ser Ala Gly Pro Cys Ile Gly
 1 5 10 15

Met Phe Ser Arg Tyr Phe Tyr Asn Gly Thr Ser Met Ala Cys Glu Thr
 20 25 30

Phe Gln Tyr Gly Gly Cys Met Gly Asn Gly Asn Asn Phe Val Thr Glu
 35 40 45

Lys Asp Cys Leu Gln Thr Cys Arg Gly Ala
 50 55

<210> 25
 <211> 58
 <212> PRT
 <213> Homo sapiens

<400> 25

Thr Val Ala Ala Cys Asn Leu Pro Ile Val Arg Gly Pro Cys Arg Ala
 1 5 10 15

Phe Ile Gln Leu Trp Ala Phe Asp Ala Val Lys Gly Lys Cys Val Leu
 20 25 30

Phe Pro Tyr Gly Gly Cys Gln Gly Asn Gly Asn Lys Phe Tyr Ser Glu
 35 40 45

Lys Glu Cys Arg Glu Tyr Cys Gly Val Pro
 50 55

<210> 26
 <211> 56
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Epi-HNE-3

<400> 26

Ala Ala Cys Asn Leu Pro Ile Val Arg Gly Pro Cys Ile Ala Phe Phe
 1 5 10 15

Pro Arg Trp Ala Phe Asp Ala Val Lys Gly Lys Cys Val Leu Phe Pro
 20 25 30

Tyr Gly Gly Cys Gln Gly Asn Gly Asn Lys Phe Tyr Ser Glu Lys Glu
 35 40 45

Cys Arg Glu Tyr Cys Gly Val Pro
50 55

<210> 27
<211> 56
<212> PRT
<213> Artificial Sequence

<220>
<223> Epi-HNE-4

<400> 27

Glu Ala Cys Asn Leu Pro Ile Val Arg Gly Pro Cys Ile Ala Phe Phe
1 5 10 15

Pro Arg Trp Ala Phe Asp Ala Val Lys Gly Lys Cys Val Leu Phe Pro
20 25 30

Tyr Gly Gly Cys Gln Gly Asn Gly Asn Lys Phe Tyr Ser Glu Lys Glu
35 40 45

Cys Arg Glu Tyr Cys Gly Val Pro
50 55

<210> 28
<211> 58
<212> PRT
<213> Homo sapiens

<400> 28

Val Arg Glu Val Cys Ser Glu Gln Ala Glu Thr Gly Pro Cys Arg Ala
1 5 10 15

Met Ile Ser Arg Trp Tyr Phe Asp Val Thr Glu Gly Lys Cys Ala Pro
20 25 30

Phe Phe Tyr Gly Gly Cys Gly Gly Asn Arg Asn Asn Phe Asp Thr Glu
35 40 45

Glu Tyr Cys Met Ala Val Cys Gly Ser Ala
50 55

<210> 29
<211> 58
<212> PRT
<213> Artificial Sequence

<220>

<223> DPI.1.1

<400> 29

Val	Arg	Glu	Val	Cys	Ser	Glu	Gln	Ala	Tyr	Thr	Gly	Pro	Cys	Ile	Ala
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Phe	Phe	Pro	Arg	Tyr	Tyr	Phe	Asp	Val	Thr	Glu	Gly	Lys	Cys	Gln	Thr
			20					25					30		

Phe	Val	Tyr	Gly	Gly	Cys	Met	Gly	Asn	Gly	Asn	Asn	Phe	Asp	Thr	Glu
		35					40					45			

Glu	Tyr	Cys	Met	Ala	Val	Cys	Gly	Ser	Ala
	50					55			

<210> 30

<211> 58

<212> PRT

<213> Artificial Sequence

<220>

<223> DPI.1.2

<400> 30

Val	Arg	Glu	Val	Cys	Ser	Glu	Gln	Ala	Glu	Thr	Gly	Pro	Cys	Ile	Ala
1				5					10					15	

Met	Phe	Ser	Arg	Trp	Tyr	Phe	Asp	Val	Thr	Glu	Gly	Lys	Cys	Ala	Pro
			20					25					30		

Phe	Val	Tyr	Gly	Gly	Cys	Gly	Gly	Asn	Arg	Asn	Asn	Phe	Asp	Thr	Glu
		35					40					45			

Glu	Tyr	Cys	Met	Ala	Val	Cys	Gly	Ser	Ala
	50					55			

<210> 31

<211> 58

<212> PRT

<213> Artificial Sequence

<220>

<223> DPI.1.3

<400> 31

Val	Arg	Glu	Val	Cys	Ser	Glu	Gln	Ala	Glu	Thr	Gly	Pro	Cys	Ile	Ala
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

1 5 10 15
 Phe Phe Ser Arg Trp Tyr Phe Asp Val Thr Glu Gly Lys Cys Ala Thr
 20 25 30
 Phe Val Tyr Gly Gly Cys Met Gly Asn Arg Asn Asn Phe Asp Thr Glu
 35 40 45
 Glu Tyr Cys Met Ala Val Cys Gly Ser Ala
 50 55

 <210> 32
 <211> 58
 <212> PRT
 <213> Homo sapiens

 <400> 32
 Asn Ala Glu Ile Cys Leu Leu Pro Leu Asp Tyr Gly Pro Cys Arg Ala
 1 5 10 15
 Leu Leu Leu Arg Tyr Tyr Tyr Asp Arg Tyr Thr Gln Ser Cys Arg Gln
 20 25 30
 Phe Leu Tyr Gly Gly Cys Glu Gly Asn Ala Asn Asn Phe Tyr Thr Trp
 35 40 45
 Glu Ala Cys Asp Asp Ala Cys Trp Arg Ile
 50 55

 <210> 33
 <211> 58
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> DPI.2.1

 <400> 33
 Asn Ala Glu Ile Cys Leu Leu Pro Leu Tyr Thr Gly Pro Cys Ile Ala
 1 5 10 15
 Phe Phe Pro Arg Tyr Tyr Tyr Asp Arg Tyr Thr Gln Ser Cys Gln Thr
 20 25 30
 Phe Val Tyr Gly Gly Cys Met Gly Asn Ala Asn Asn Phe Tyr Thr Trp
 35 40 45

Glu Ala Cys Asp Asp Ala Cys Trp Arg Ile
 50 55

<210> 34
 <211> 58
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> DPI.2.2

<400> 34

Asn Ala Glu Ile Cys Leu Leu Pro Leu Asp Tyr Gly Pro Cys Ile Ala
 1 5 10 15

Leu Phe Leu Arg Tyr Tyr Tyr Asp Arg Tyr Thr Gln Ser Cys Arg Gln
 20 25 30

Phe Val Tyr Gly Gly Cys Glu Gly Asn Ala Asn Asn Phe Tyr Thr Trp
 35 40 45

Glu Ala Cys Asp Asp Ala Cys Trp Arg Ile
 50 55

<210> 35
 <211> 58
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> DPI.2.3

<400> 35

Asn Ala Glu Ile Cys Leu Leu Pro Leu Asp Thr Gly Pro Cys Ile Ala
 1 5 10 15

Phe Phe Leu Arg Tyr Tyr Tyr Asp Arg Tyr Thr Gln Ser Cys Gln Thr
 20 25 30

Phe Val Tyr Gly Gly Cys Met Gly Asn Ala Asn Asn Phe Tyr Thr Trp
 35 40 45

Glu Ala Cys Asp Asp Ala Cys Trp Arg Ile
 50 55

<210> 36
 <211> 61
 <212> PRT
 <213> Homo sapiens

<400> 36

Val Pro Lys Val Cys Arg Leu Gln Val Ser Val Asp Asp Gln Cys Glu
 1 5 10 15

Gly Ser Thr Glu Lys Tyr Phe Phe Asn Leu Ser Ser Met Thr Cys Glu
 20 25 30

Lys Phe Phe Ser Gly Gly Cys His Arg Asn Arg Ile Glu Asn Arg Phe
 35 40 45

Pro Asp Glu Ala Thr Cys Met Gly Phe Cys Ala Pro Lys
 50 55 60

<210> 37
 <211> 58
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> DPI.3.1

<400> 37

Val Pro Lys Val Cys Arg Leu Gln Val Val Arg Gly Pro Cys Ile Ala
 1 5 10 15

Phe Phe Pro Arg Trp Phe Phe Asn Leu Ser Ser Met Thr Cys Val Leu
 20 25 30

Phe Pro Tyr Gly Gly Cys Gln Gly Asn Gly Asn Arg Phe Pro Asp Glu
 35 40 45

Ala Thr Cys Met Gly Phe Cys Ala Pro Lys
 50 55

<210> 38
 <211> 61
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> DPI.3.2

<400> 38

Val Pro Lys Val Cys Arg Leu Gln Val Ser Val Asp Asp Gln Cys Ile
1 5 10 15

Gly Ser Phe Glu Lys Tyr Phe Phe Asn Leu Ala Ser Met Thr Cys Glu
20 25 30

Thr Phe Val Ser Gly Gly Cys His Arg Asn Arg Ile Glu Asn Arg Phe
35 40 45

Pro Asp Glu Ala Thr Cys Met Gly Phe Cys Ala Pro Lys
50 55 60

<210> 39
<211> 58
<212> PRT
<213> Artificial Sequence

<220>
<223> DPI.3.3

<400> 39

Val Pro Lys Val Cys Arg Leu Gln Val Val Ala Gly Pro Cys Ile Gly
1 5 10 15

Phe Phe Lys Arg Tyr Phe Phe Ala Leu Ser Ser Met Thr Cys Glu Thr
20 25 30

Phe Val Ser Gly Gly Cys His Arg Asn Arg Asn Arg Phe Pro Asp Glu
35 40 45

Ala Thr Cys Met Gly Phe Cys Ala Pro Lys
50 55

<210> 40
<211> 58
<212> PRT
<213> Homo sapiens

<400> 40

Ile Pro Ser Phe Cys Tyr Ser Pro Lys Asp Glu Gly Leu Cys Ser Ala
1 5 10 15

Asn Val Thr Arg Tyr Tyr Phe Asn Pro Arg Tyr Arg Thr Cys Asp Ala
20 25 30

Phe Thr Tyr Thr Gly Cys Gly Gly Asn Asp Asn Asn Phe Val Ser Arg
 35 40 45

Glu Asp Cys Lys Arg Ala Cys Ala Lys Ala
 50 55

<210> 41
 <211> 58
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> DPI.4.1

<400> 41

Ile Pro Ser Phe Cys Tyr Ser Pro Lys Ser Ala Gly Pro Cys Val Ala
 1 5 10 15

Met Phe Pro Arg Tyr Tyr Phe Asn Pro Arg Tyr Arg Thr Cys Glu Thr
 20 25 30

Phe Val Tyr Gly Gly Cys Met Gly Asn Gly Asn Asn Phe Val Ser Arg
 35 40 45

Glu Asp Cys Lys Arg Ala Cys Ala Lys Ala
 50 55

<210> 42
 <211> 58
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> DPI.4.2

<400> 42

Ile Pro Ser Phe Cys Tyr Ser Pro Lys Asp Glu Gly Leu Cys Ile Ala
 1 5 10 15

Phe Phe Thr Arg Tyr Tyr Phe Asn Pro Arg Tyr Arg Thr Cys Asp Ala
 20 25 30

Phe Thr Tyr Thr Gly Cys Gly Gly Asn Asp Asn Asn Phe Val Ser Arg
 35 40 45

Glu Asp Cys Lys Arg Ala Cys Ala Lys Ala
 50 55

<210> 43
 <211> 58
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> DPI.4.3

<400> 43

Ile Pro Ser Phe Cys Tyr Ser Pro Lys Asp Thr Gly Pro Cys Ile Ala
 1 5 10 15

Phe Phe Thr Arg Tyr Tyr Phe Asn Pro Arg Tyr Arg Thr Cys Asp Thr
 20 25 30

Phe Val Tyr Gly Gly Cys Gly Gly Asn Asp Asn Asn Phe Val Ser Arg
 35 40 45

Glu Asp Cys Lys Arg Ala Cys Ala Lys Ala
 50 55

<210> 44
 <211> 58
 <212> PRT
 <213> Homo sapiens

<400> 44

Met His Ser Phe Cys Ala Phe Lys Ala Asp Asp Gly Pro Cys Lys Ala
 1 5 10 15

Ile Met Lys Arg Phe Phe Phe Asn Ile Phe Thr Arg Gln Cys Glu Glu
 20 25 30

Phe Ile Tyr Gly Gly Cys Glu Gly Asn Gln Asn Arg Phe Glu Ser Leu
 35 40 45

Glu Glu Cys Lys Lys Met Cys Thr Arg Asp
 50 55

<210> 45
 <211> 58
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> DPI.5.1

<400> 45

Met His Ser Phe Cys Ala Phe Lys Ala Ser Ala Gly Pro Cys Val Ala
 1 5 10 15

Met Phe Pro Arg Tyr Phe Phe Asn Ile Phe Thr Arg Gln Cys Glu Thr
 20 25 30

Phe Val Tyr Gly Gly Cys Met Gly Asn Gly Asn Arg Phe Glu Ser Leu
 35 40 45

Glu Glu Cys Lys Lys Met Cys Thr Arg Asp
 50 55

<210> 46

<211> 58

<212> PRT

<213> Artificial Sequence

<220>

<223> DPI.5.2

<400> 46

Met His Ser Phe Cys Ala Phe Lys Ala Asp Asp Gly Pro Cys Ile Ala
 1 5 10 15

Ile Phe Lys Arg Phe Phe Phe Asn Ile Phe Thr Arg Gln Cys Glu Glu
 20 25 30

Phe Ile Tyr Gly Gly Cys Glu Gly Asn Gln Asn Arg Phe Glu Ser Leu
 35 40 45

Glu Glu Cys Lys Lys Met Cys Thr Arg Asp
 50 55

<210> 47

<211> 58

<212> PRT

<213> Artificial Sequence

<220>

<223> DPI.5.3

<400> 47

Met His Ser Phe Cys Ala Phe Lys Ala Tyr Thr Gly Pro Cys Ile Ala
 1 5 10 15

Phe Phe Lys Arg Phe Phe Phe Asn Ile Phe Thr Arg Gln Cys Glu Thr
 20 25 30

Phe Ile Tyr Gly Gly Cys Glu Gly Asn Gln Asn Arg Phe Glu Ser Leu
 35 40 45

Glu Glu Cys Lys Lys Met Cys Thr Arg Asp
 50 55

<210> 48
 <211> 58
 <212> PRT
 <213> Homo sapiens

<400> 48

Lys Pro Asp Phe Cys Phe Leu Glu Glu Asp Pro Gly Ile Cys Arg Gly
 1 5 10 15

Tyr Ile Thr Arg Tyr Phe Tyr Asn Asn Gln Thr Lys Gln Cys Glu Arg
 20 25 30

Phe Lys Tyr Gly Gly Cys Leu Gly Asn Met Asn Asn Phe Glu Thr Leu
 35 40 45

Glu Glu Cys Lys Asn Ile Cys Glu Asp Gly
 50 55

<210> 49
 <211> 58
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> DPI.6.1

<400> 49

Lys Pro Asp Phe Cys Phe Leu Glu Glu Ser Ala Gly Pro Cys Val Ala
 1 5 10 15

Met Phe Pro Arg Tyr Phe Tyr Asn Asn Gln Thr Lys Gln Cys Glu Thr
 20 25 30

Phe Val Tyr Gly Gly Cys Met Gly Asn Gly Asn Asn Phe Glu Thr Leu
 35 40 45

Glu Glu Cys Lys Asn Ile Cys Glu Asp Gly
 50 55

<210> 50
 <211> 58
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> DPI.6.2

<400> 50

Lys Pro Asp Phe Cys Phe Leu Glu Glu Asp Pro Gly Ile Cys Val Gly
 1 5 10 15

Tyr Phe Thr Arg Tyr Phe Tyr Asn Asn Gln Thr Lys Gln Cys Glu Arg
 20 25 30

Phe Lys Tyr Gly Gly Cys Leu Gly Asn Met Asn Asn Phe Glu Thr Leu
 35 40 45

Glu Glu Cys Lys Asn Ile Cys Glu Asp Gly
 50 55

<210> 51
 <211> 58
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> DPI.6.3

<400> 51

Lys Pro Asp Phe Cys Phe Leu Glu Glu Asp Pro Gly Ile Cys Val Gly
 1 5 10 15

Phe Phe Thr Arg Tyr Phe Tyr Asn Asn Gln Thr Lys Gln Cys Glu Arg
 20 25 30

Phe Val Tyr Gly Gly Cys Leu Gly Asn Met Asn Asn Phe Glu Thr Leu
 35 40 45

Glu Glu Cys Lys Asn Ile Cys Glu Asp Gly
 50 55

<210> 52
 <211> 58

<212> PRT
 <213> Artificial Sequence

<220>
 <223> DPI.6.4

<400> 52

Lys Pro Asp Phe Cys Phe Leu Glu Glu Asp Pro Gly Ile Cys Val Gly
 1 5 10 15

Phe Phe Thr Arg Tyr Phe Tyr Asn Ala Gln Thr Lys Gln Cys Glu Arg
 20 25 30

Phe Val Tyr Gly Gly Cys Leu Gly Asn Met Asn Asn Phe Glu Thr Leu
 35 40 45

Glu Glu Cys Lys Asn Ile Cys Glu Asp Gly
 50 55

<210> 53
 <211> 58
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> DPI.6.5

<400> 53

Lys Pro Asp Phe Cys Phe Leu Glu Glu Asp Pro Gly Pro Cys Val Gly
 1 5 10 15

Phe Phe Gln Arg Tyr Phe Tyr Asn Ala Gln Thr Lys Gln Cys Glu Arg
 20 25 30

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Glu Glu Cys Lys Asn Ile Cys Glu Asp Gly
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 <213> Artificial Sequence

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<400> 54

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Phe Val Tyr Gly Gly Cys Gln Gly Asn Met Asn Asn Phe Glu Thr Leu
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Glu Glu Cys Lys Asn Ile Cys Glu Asp Gly
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Glu Glu Cys Lys Asn Ile Cys Glu Asp Gly
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<210> 56

<211> 58

<212> PRT

<213> Homo sapiens

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Gly Pro Ser Trp Cys Leu Thr Pro Ala Asp Arg Gly Leu Cys Arg Ala
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Gln Glu Cys Leu Arg Ala Cys Lys Lys Gly
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Gln Glu Cys Leu Arg Ala Cys Lys Lys Gly
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Phe Lys Tyr Gly Gly Cys Gly Gly Asn Glu Asn Asn Phe Lys Ser Lys
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Gln Glu Cys Leu Arg Ala Cys Lys Lys Gly
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20 25 30

Phe Val Tyr Gly Gly Cys Gly Gly Asn Glu Asn Asn Phe Ala Ser Lys
35 40 45

Gln Glu Cys Leu Arg Ala Cys Lys Lys Gly
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<210> 62

<211> 58

<212> PRT

<213> Homo sapiens

<400> 62

Glu Thr Asp Ile Cys Lys Leu Pro Lys Asp Glu Gly Thr Cys Arg Asp
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Phe Ile Leu Lys Trp Tyr Tyr Asp Pro Asn Thr Lys Ser Cys Ala Arg
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Phe Trp Tyr Gly Gly Cys Gly Gly Asn Glu Asn Lys Phe Gly Ser Gln
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Lys Glu Cys Glu Lys Val Cys Ala Pro Val
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 20 25 30

Phe Val Tyr Gly Gly Cys Gly Gly Asn Glu Asn Lys Phe Gly Ser Gln
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Lys Glu Cys Glu Lys Val Cys Ala Pro Val
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Lys Glu Cys Glu Lys Val Cys Ala Pro Val
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<210> 66
 <211> 58
 <212> PRT
 <213> Homo sapiens

<400> 66

Leu Pro Asn Val Cys Ala Phe Pro Met Glu Lys Gly Pro Cys Gln Thr
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 35 40 45

Glu Lys Cys Glu Lys Phe Cys Lys Phe Thr
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<400> 67

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Phe Phe Pro Arg Trp Phe Phe Asn Phe Glu Thr Gly Glu Cys Val Leu
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Phe Val Tyr Gly Gly Cys Gln Gly Asn Gly Asn Asn Phe Leu Arg Lys
 35 40 45

Glu Lys Cys Glu Lys Phe Cys Lys Phe Thr
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<211> 58
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 <223> DPI.9.2

<400> 68

Leu Pro Asn Val Cys Ala Phe Pro Met Glu Lys Gly Pro Cys Ile Ala
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Tyr Phe Thr Arg Trp Phe Phe Asn Phe Glu Thr Gly Glu Cys Glu Leu
 20 25 30

Phe Ala Tyr Gly Gly Cys Gly Gly Asn Ser Asn Asn Phe Leu Arg Lys
 35 40 45

Glu Lys Cys Glu Lys Phe Cys Lys Phe Thr
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<210> 69
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 <212> PRT
 <213> Artificial Sequence

<220>
 <223> DPI.9.3

<400> 69

Leu Pro Asn Val Cys Ala Phe Pro Met Glu Lys Gly Pro Cys Ile Ala
 1 5 10 15

Tyr Phe Pro Arg Trp Phe Phe Asn Phe Glu Thr Gly Glu Cys Val Leu
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Phe Val Tyr Gly Gly Cys Gly Gly Asn Ser Asn Asn Phe Leu Arg Lys
 35 40 45

Glu Lys Cys Glu Lys Phe Cys Lys Phe Thr
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<210> 71

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<210> 72

<211> 141

<212> PRT

<213> Artificial Sequence

<220>

<223> Plasmid pHIL-D2 (MFalphaPrePro::EPI-HNE-3) (Table 251)

<400> 72

Met Arg Phe Pro Ser Ile Phe Thr Ala Val Leu Phe Ala Ala Ser Ser
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Ala Leu Ala Ala Pro Val Asn Thr Thr Thr Glu Asp Glu Thr Ala Gln
 20 25 30

Ile Pro Ala Glu Ala Val Ile Gly Tyr Ser Asp Leu Glu Gly Asp Phe
 35 40 45

Asp Val Ala Val Leu Pro Phe Ser Asn Ser Thr Asn Asn Gly Leu Leu
 50 55 60

Phe Ile Asn Thr Thr Ile Ala Ser Ile Ala Ala Lys Glu Glu Gly Val
 65 70 75 80

Ser Leu Asp Lys Arg Ala Ala Cys Asn Leu Pro Ile Val Arg Gly Pro
 85 90 95

Cys Ile Ala Phe Phe Pro Arg Trp Ala Phe Asp Ala Val Lys Gly Lys
 100 105 110

Cys Val Leu Phe Pro Tyr Gly Gly Cys Gln Gly Asn Gly Asn Lys Phe
 115 120 125

Tyr Ser Glu Lys Glu Cys Arg Glu Tyr Cys Gly Val Pro
 130 135 140

<210> 73

<211> 444

<212> DNA

<213> Artificial Sequence

<220>

<223> BstBI-AatII-EcoRI cassette for expression of Epi-HNE-4 (Table 252)

<400> 73

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 tgtggtgttc catagtaaga attc 444

<210> 74
 <211> 141
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> BstBI-AatII-EcoRI cassette for expression of Epi-HNE-4 (Table 252
)

<400> 74

Met Arg Phe Pro Ser Ile Phe Thr Ala Val Leu Phe Ala Ala Ser Ser
 1 5 10 15

Ala Leu Ala Ala Pro Val Asn Thr Thr Thr Glu Asp Glu Thr Ala Gln
 20 25 30

Ile Pro Ala Glu Ala Val Ile Gly Tyr Ser Asp Leu Glu Gly Asp Phe
 35 40 45

Asp Val Ala Val Leu Pro Phe Ser Asn Ser Thr Asn Asn Gly Leu Leu
 50 55 60

Phe Ile Asn Thr Thr Ile Ala Ser Ile Ala Ala Lys Glu Glu Gly Val
 65 70 75 80

Ser Leu Asp Lys Arg Glu Ala Cys Asn Leu Pro Ile Val Arg Gly Pro
 85 90 95

Cys Ile Ala Phe Phe Pro Arg Trp Ala Phe Asp Ala Val Lys Gly Lys
 100 105 110

Cys Val Leu Phe Pro Tyr Gly Gly Cys Gln Gly Asn Gly Asn Lys Phe
 115 120 125

Tyr Ser Glu Lys Glu Cys Arg Glu Tyr Cys Gly Val Pro
 130 135 140

<210> 75
 <211> 8590
 <212> DNA

<213> Artificial Sequence

<220>

<223> pD2pick (MFalphaPrePro::EPI-NHE-3) circular dsDNA (Table 253)

<400> 75

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caaccacaaa	tttcaagcag	tctccatcac	aatccaattc	gatacccagc	aacttttgag	3900
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ctaccaactt	tgcggtctca	gaaaaagcat	aaacagttct	actaccgcca	ttagtgaaac	4260
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caactctttc	tgccaaatct	aggtccaaaa	tcacttcatt	gataccatta	tacggatgac	4440
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gcaacacttg	cgtatgcagg	tagcaaggga	aatgtcatac	ttgaagtcgg	acagtgagtg	4620
tagtcttgag	aaattctgaa	gccgtatttt	tattatcagt	gagtcagtca	tcaggagatc	4680
ctctacgccg	gacgcacgt	ggccggcatc	accggcgcca	caggtgcggt	tgctggcgcc	4740
tatatcgccg	acatcaccga	tggggaagat	cgggctcgcc	acttcgggct	catgagcgct	4800
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gcttaccttc tggaccttca agaggatgt agggtttgta gatactgatg ccaacttcag		5340
tgacaacgtt gctatttcgt tcaaaccatt ccgaatccag agaaatcaaa gttgtttgtc		5400
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tcattcttgt atgaataaat ctagtcttgc atctaaataa tcttgacgag ccaaggcgat		5520
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tacgcctatt tttataggtt aatgtcatga taataatggt ttcttagacg tacgtcaggt		5940
ggcacttttc ggggaaatgt gcgcggaacc cctatttgtt tatttttcta aatacattca		6000
aatatgtatc cgctcatgag acaataaccc tgataaatgc ttcaataata ttgaaaaagg		6060
aagagtatga gtattcaaca tttccgtgtc gcccttattc ctttttttgc ggcattttgc		6120
cttctgtttt ttgctcacc agaaacgctg gtgaaagtaa aagatgctga agatcagttg		6180
ggtgcacgag tgggttacat cgaactggat ctcaacagcg gtaagatcct tgagagtttt		6240
cgccccgaag aacgttttcc aatgatgagc acttttaaag ttctgctatg tggcgcggt		6300
ttatcccggt ttgacgcgg gcaagagcaa ctcggtcgcc gcatacacta ttctcagaat		6360
gacttggttg agtactcacc agtcacagaa aagcatctta cggatggcat gacagtaaga		6420
gaattatgca gtgctgccat aacctgagt gataacactg cgccaactt acttctgaca		6480
acgatcggag gaccgaagga gctaaccgct tttttgcaca acatggggga tcatgtaact		6540
cgccttgatc gttgggaacc ggagctgaat gaagccatac caaacgacga gcgtgacacc		6600
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ctagcttccc ggcaacaatt aatagactgg atggaggcgg ataaagtgtc agggaccatt		6720
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gaagaaagcg aaaggagcgg gcgctagggc gctggcaagt gtagcgggtca cgctgcgcgt	7380
aaccaccaca cccgccgcgc ttaatgcgc gctacaggggc gcgtaaaagg atctaggtga	7440
agatccctttt tgataatctc atgacaaaaa tcccttaacg tgagttttcg ttccactgag	7500
cgtcagaccc cgtagaaaag atcaaaggat cttcttgaga tccttttttt ctgcgcgtaa	7560
tctgctgctt gcaaacaaaa aaaccaccgc taccagcggg ggtttgtttg ccggatcaag	7620
agctaccaac tctttttccg aaggtaactg gcttcagcag agcgcagata ccaaatactg	7680
tccttctagt gtagccgtag ttaggccacc acttcaagaa ctctgtagca ccgcctacat	7740
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gttcgtgcac acagcccagc ttggagcgaa cgacctacac cgaactgaga tacctacagc	7920
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gcggcagggg cggaacagga gagcgcacga gggagcttcc agggggaaac gcctgggtatc	8040
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gtattaccgc ctttgagtga gctgataccg ctgcgccgag ccgaacgacc gagcgacgcg	8280
agtcagttag cgaggaagcg gaagagcgcc tgatgcggta ttttctcctt acgcatctgt	8340
gcggtatattc acaccgcata tgggtgcactc tcagtacaat ctgctctgat gccgcatagt	8400
taagccagta tacactccgc tatcgctacg tgactgggtc atggctgcgc cccgacaccc	8460
gccaacaccc gctgacgcgc cctgacgggc ttgtctgctc ccggcatccg cttacagaca	8520

agctgtgacc gtctccggga gctgcatgtg tcagaggttt tcaccgtcat caccgaaacg 8580
cgcgaggcag 8590

<210> 76
<211> 141
<212> PRT
<213> Artificial Sequence

<220>
<223> EPI-HNE-3 fusion protein (Table 253)

<400> 76

Met Arg Phe Pro Ser Ile Phe Thr Ala Val Leu Phe Ala Ala Ser Ser
1 5 10 15

Ala Leu Ala Ala Pro Val Asn Thr Thr Thr Glu Asp Glu Thr Ala Gln
20 25 30

Ile Pro Ala Glu Ala Val Ile Gly Tyr Ser Asp Leu Glu Gly Asp Phe
35 40 45

Asp Val Ala Val Leu Pro Phe Ser Asn Ser Thr Asn Asn Gly Leu Leu
50 55 60

Phe Ile Asn Thr Thr Ile Ala Ser Ile Ala Ala Lys Glu Glu Gly Val
65 70 75 80

Ser Leu Asp Lys Arg Ala Ala Cys Asn Leu Pro Ile Val Arg Gly Pro
85 90 95

Cys Ile Ala Phe Phe Pro Arg Trp Ala Phe Asp Ala Val Lys Gly Lys
100 105 110

Cys Val Leu Phe Pro Tyr Gly Gly Cys Gln Gly Asn Gly Asn Lys Phe
115 120 125

Tyr Ser Glu Lys Glu Cys Arg Glu Tyr Cys Gly Val Pro
130 135 140

<210> 77
<211> 147
<212> PRT
<213> Homo sapiens

<400> 77

Ala Val Leu Pro Gln Glu Glu Glu Gly Ser Gly Gly Gly Gln Leu Val
1 5 10 15

Thr Glu Val Thr Lys Lys Glu Asp Ser Cys Gln Leu Gly Tyr Ser Ala
20 25 30

Gly Pro Cys Met Gly Met Thr Ser Arg Tyr Phe Tyr Asn Gly Thr Ser
35 40 45

Met Ala Cys Glu Thr Phe Gln Tyr Gly Gly Cys Met Gly Asn Gly Asn
50 55 60

Asn Phe Val Thr Glu Lys Glu Cys Leu Gln Thr Cys Arg Thr Val Ala
65 70 75 80

Ala Cys Asn Leu Pro Ile Val Arg Gly Pro Cys Arg Ala Phe Ile Gln
85 90 95

Leu Trp Ala Phe Asp Ala Val Lys Gly Lys Cys Val Leu Phe Pro Tyr
100 105 110

Gly Gly Cys Gln Gly Asn Gly Asn Lys Phe Tyr Ser Glu Lys Glu Cys
115 120 125

Arg Glu Tyr Cys Gly Val Pro Gly Asp Gly Asp Glu Glu Leu Leu Arg
130 135 140

Phe Ser Asn
145

<210> 78
<211> 249
<212> DNA
<213> Artificial Sequence

<220>

<223> M13_III_signal::Human_LACI-D2::mature_M13_III (Table 720)

<400> 78

atgaagaagc ttctcttcgc cattcctctg gtggtacctt tctattccgg cgccaagcct 60
gacttctgct tcctcgagga ggatccccggg atttgccgcg gttatattac gcggttatttc 120
tataataacc agactaagca atgtgagcgg ttcaagtatg gtggttgccct aggtaatatg 180
aacaacttcg agactctaga agagtgtgaa aacatatgtg aggatgggtgg tgctgagact 240
gttgagtct 249

<210> 79
 <211> 83
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> LACI-D2 fusion protein (Table 720)
 <400> 79

Met Lys Lys Leu Leu Phe Ala Ile Pro Leu Val Val Pro Phe Tyr Ser
 1 5 10 15

Gly Ala Lys Pro Asp Phe Cys Phe Leu Glu Glu Asp Pro Gly Ile Cys
 20 25 30

Arg Gly Tyr Ile Thr Arg Tyr Phe Tyr Asn Asn Gln Thr Lys Gln Cys
 35 40 45

Glu Arg Phe Lys Tyr Gly Gly Cys Leu Gly Asn Met Asn Asn Phe Glu
 50 55 60

Thr Leu Glu Glu Cys Lys Asn Ile Cys Glu Asp Gly Gly Ala Glu Thr
 65 70 75 80

Val Glu Ser

<210> 80
 <211> 189
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> laci-d1 with cloning sites (Table 725)

<400> 80
 gcggccgaga tgcattcctt ctgcgctttc aaagctgatg acggtcctgtg taaagctatc 60
 atgaaacgtt tcttcttcaa cattttcacg cgtcagtgcg aggaattcat ttacggtggt 120
 tgtgaaggta accagaaccg gttcgaatct ctagagggaat gtaagaagat gtgcactcgt 180
 gacggcgcc 189

<210> 81
 <211> 63
 <212> PRT
 <213> Artificial Sequence

<220>

<223> laci-d1 with linkers (Table 725)

<400> 81

Ala	Ala	Glu	Met	His	Ser	Phe	Cys	Ala	Phe	Lys	Ala	Asp	Asp	Gly	Pro
1				5					10					15	

Cys	Lys	Ala	Ile	Met	Lys	Arg	Phe	Phe	Phe	Asn	Ile	Phe	Thr	Arg	Gln
		20					25						30		

Cys	Glu	Glu	Phe	Ile	Tyr	Gly	Gly	Cys	Glu	Gly	Asn	Gln	Asn	Arg	Phe
		35				40						45			

Glu	Ser	Leu	Glu	Glu	Cys	Lys	Lys	Met	Cys	Thr	Arg	Asp	Gly	Ala
	50					55					60			

<210> 82

<211> 189

<212> DNA

<213> Artificial Sequence

<220>

<223> LACI-D1 hNE library (Table 730)

<220>

<221> misc_feature

<222> (37)..(37)

<223> n is a, c, g or t

<220>

<221> misc_feature

<222> (47)..(47)

<223> n is a, c, g or t

<220>

<221> misc_feature

<222> (58)..(58)

<223> n is a, c, g or t

<220>

<221> misc_feature

<222> (65)..(65)

<223> n is a, c, g or t

<400> 82

gcggccgaga	tgcattcctt	ctgcgctttc	aaagctnrtr	vsggtcnttg	trttgstntc	60
------------	------------	------------	------------	------------	------------	----

tccmnsctgt	dtttcttcaa	cattttcacg	cgtcagtgc	wgvhattcvh	atacgggtgt	120
------------	------------	------------	-----------	------------	------------	-----

tgtvhggsta acsrgaacgg gttcgaatct ctagaggaat gtaagaagat gtgcactcgt 180

gacggcgcc 189

<210> 83

<211> 63

<212> PRT

<213> Artificial Sequence

<220>

<223> LACI-D1 hNE library (Table 730)

<220>

<221> misc_feature

<222> (13)..(13)

<223> Xaa is Cys, Arg, Ser, Gly, Tyr, His, Asp or Asn

<220>

<221> misc_feature

<222> (14)..(14)

<223> Xaa is Thr, Asn, Lys, Arg, Ser, Ala, Glu, Gly or Asp

<220>

<221> misc_feature

<222> (16)..(16)

<223> Xaa is His, Arg, Pro or Leu

<220>

<221> misc_feature

<222> (18)..(18)

<223> Xaa is Val or Ile

<220>

<221> misc_feature

<222> (19)..(19)

<223> Xaa is Ala or Gly

<220>

<221> misc_feature

<222> (20)..(20)

<223> Xaa is Phe, Leu, Ile or Val

<220>

<221> misc_feature

<222> (22)..(22)

<223> Xaa is Ser, Thr, Asn, Ile, Met, Gln, His, Leu, Pro, Lys or Arg

<220>

<221> misc_feature

<222> (24)..(24)
 <223> Xaa is Cys, Tyr, Trp, Phe or Leu

<220>
 <221> misc_feature
 <222> (34)..(34)
 <223> Xaa is Leu, Gln, Glu or Val

<220>
 <221> misc_feature
 <222> (35)..(35)
 <223> Xaa is Gln, Leu, Pro, Thr, Lys, Val, Ile, Glu or Ala

<220>
 <221> misc_feature
 <222> (37)..(37)
 <223> Xaa is Gln, Leu, Pro, Thr, Lys, Val, Glu, Ile or Ala

<220>
 <221> misc_feature
 <222> (42)..(42)
 <223> Xaa is Gln, Leu, Pro, Thr, Lys, Val, Met, Glu or Ala

<220>
 <221> misc_feature
 <222> (43)..(43)
 <223> Xaa is Gly or Ala

<220>
 <221> misc_feature
 <222> (45)..(45)
 <223> Xaa is Glu, Gly, Gln or Arg

<400> 83

Ala Ala Glu Met His Ser Phe Cys Ala Phe Lys Ala Xaa Xaa Gly Xaa
 1 5 10 15

Cys Xaa Xaa Xaa Phe Xaa Arg Xaa Phe Phe Asn Ile Phe Thr Arg Gln
 20 25 30

Cys Xaa Xaa Phe Xaa Tyr Gly Gly Cys Xaa Xaa Asn Xaa Asn Arg Phe
 35 40 45

Glu Ser Leu Glu Glu Cys Lys Lys Met Cys Thr Arg Asp Gly Ala
 50 55 60

<210> 84
 <211> 201
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> LACI-D2 hNE library (Table 735)

<220>
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 <222> (34)..(34)
 <223> n is a, c, g or t

<220>
 <221> misc_feature
 <222> (44)..(44)
 <223> n is a, c, g or t

<220>
 <221> misc_feature
 <222> (55)..(55)
 <223> n is a, c, g or t

<220>
 <221> misc_feature
 <222> (62)..(62)
 <223> n is a, c, g or t

<220>
 <221> misc_feature
 <222> (101)..(101)
 <223> n is a, c, g or t

<400> 84
 ggcgccaagc ctgacttctg cttcctcgag gagnrtvvsg ggmnttgcert tgstnwtttt 60
 mnscgttdst tctataataa ccaggctaag caatgtswgv nattcvhata tggtggttgc 120
 vhggstaatv bgaacaactt cgagactcta gaagagtgtga agaacatatg tgaggatggt 180
 ggtgctgaga ctgttgagtc t 201

<210> 85
 <211> 67
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> LACI-D2 hNE library (Table 735)

<220>
 <221> misc_feature

<222> (12)..(12)
<223> Xaa is Cys, Arg, Ser, Gly, Tyr, His, Asp or Asn

<220>
<221> misc_feature
<222> (13)..(13)
<223> Xaa is Pro, His, Thr, Asn, Lys, Arg, Ser, Ala, Glu, Gly, Asp or Gln

<220>
<221> misc_feature
<222> (15)..(15)
<223> Xaa is His, Arg, Pro, Leu, Asn, Ser, Ile or Thr

<220>
<221> misc_feature
<222> (17)..(17)
<223> Xaa is Val or Ile

<220>
<221> misc_feature
<222> (18)..(18)
<223> Xaa is Gly or Ala

<220>
<221> misc_feature
<222> (19)..(19)
<223> Xaa is Phe, Leu, Ile, Val, Tyr, His, Asn or Asp

<220>
<221> misc_feature
<222> (21)..(21)
<223> Xaa is Ile, Asn, Gln, Met, Leu, His, Lys, Pro, Thr or Arg

<220>
<221> misc_feature
<222> (23)..(23)
<223> Xaa is Cys, Phe, Leu, Tyr or Trp

<220>
<221> misc_feature
<222> (33)..(33)
<223> Xaa is Leu, Gln, Glu or Val

<220>
<221> misc_feature
<222> (34)..(34)
<223> Xaa is Gln, Gly, Leu, Pro, Thr, Lys, Val, Ile, Glu, Ala or Arg

<220>
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 <222> (36)..(36)
 <223> Xaa is Gln, Leu, Pro, Thr, Val, Glu, Ile, Ala or Lys

<220>
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 <222> (41)..(41)
 <223> Xaa is Gln, Pro, Thr, Lys, Val, Met, Glu, Ala or Leu

<220>
 <221> misc_feature
 <222> (42)..(42)
 <223> Xaa is Gly or Ala

<220>
 <221> misc_feature
 <222> (44)..(44)
 <223> Xaa is Arg, Gly, Lys, Glu, Leu, Gln, Met or Val

<400> 85

Gly	Ala	Lys	Pro	Asp	Phe	Cys	Phe	Leu	Glu	Glu	Xaa	Xaa	Gly	Xaa	Cys
1				5					10					15	

Xaa	Xaa	Xaa	Phe	Xaa	Arg	Xaa	Phe	Tyr	Asn	Asn	Gln	Ala	Lys	Gln	Cys
			20					25					30		

Xaa	Xaa	Phe	Xaa	Tyr	Gly	Gly	Cys	Xaa	Xaa	Asn	Xaa	Asn	Asn	Phe	Glu
		35					40					45			

Thr	Leu	Glu	Glu	Cys	Lys	Asn	Ile	Cys	Glu	Asp	Gly	Gly	Ala	Glu	Thr
	50					55					60				

Val Glu Ser
 65

<210> 86
 <211> 51
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> definition of aprotonin-like Kunitz domain (p. 11)

<220>
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<223> Xaa is any amino acid

<220>

<221> misc_feature

<222> (9)..(9)

<223> Xaa is any amino acid

<220>

<221> misc_feature

<222> (11)..(18)

<223> Xaa is any amino acid

<220>

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<222> (19)..(19)

<223> Xaa is any Tyr or Phe

<220>

<221> misc_feature

<222> (20)..(25)

<223> Xaa is any amino acid

<220>

<221> misc_feature

<222> (27)..(28)

<223> Xaa is any amino acid

<220>

<221> misc_feature

<222> (30)..(30)

<223> Xaa is any amino acid

<220>

<221> misc_feature

<222> (31)..(31)

<223> Xaa is Tyr, Trp or Phe

<220>

<221> misc_feature

<222> (32)..(32)

<223> Xaa is any amino acid

<220>

<221> misc_feature

<222> (35)..(38)

<223> Xaa is any amino acid

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<221> misc_feature
 <222> (39)..(39)
 <223> Xaa is Asn or Gly

<220>
 <221> misc_feature
 <222> (40)..(40)
 <223> Xaa is any amino acid

<220>
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 <222> (41)..(41)
 <223> Xaa is Phe or Tyr

<220>
 <221> misc_feature
 <222> (42)..(46)
 <223> Xaa is any amino acid

<220>
 <221> misc_feature
 <222> (48)..(50)
 <223> Xaa is any amino acid

<400> 86

Cys Xaa Xaa Xaa Xaa Xaa Xaa Gly Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa
 1 5 10 15

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Phe Xaa Xaa Xaa
 20 25 30

Gly Cys Xaa Xaa Xaa Xaa Xaa Xaa Phe Xaa Xaa Xaa Xaa Xaa Cys Xaa
 35 40 45

Xaa Xaa Cys
 50

<210> 87
 <211> 58
 <212> PRT
 <213> Bos Taurus

<400> 87

Arg Pro Asp Phe Cys Leu Glu Pro Pro Tyr Thr Gly Pro Cys Lys Ala
 1 5 10 15

Arg Ile Ile Arg Tyr Phe Tyr Asn Ala Lys Ala Gly Leu Cys Gln Thr
 20 25 30

Phe Val Tyr Gly Gly Cys Arg Ala Lys Arg Asn Asn Phe Lys Ser Ala
 35 40 45

Glu Asp Cys Met Arg Thr Cys Gly Gly Ala
 50 55

<210> 88
 <211> 58
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Engineered B-PTI from MARK87

<400> 88

Arg Pro Asp Phe Cys Leu Glu Pro Pro Tyr Thr Gly Pro Thr Lys Ala
 1 5 10 15

Arg Ile Ile Arg Tyr Phe Tyr Asn Ala Lys Ala Gly Leu Cys Gln Thr
 20 25 30

Phe Val Tyr Gly Gly Thr Arg Ala Lys Arg Asn Asn Phe Lys Ser Ala
 35 40 45

Glu Asp Cys Met Arg Thr Cys Gly Gly Ala
 50 55

<210> 89
 <211> 58
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Engineered B-PTI from MARK87

<400> 89

Arg Pro Asp Phe Cys Leu Glu Pro Pro Tyr Thr Gly Pro Ala Lys Ala
 1 5 10 15

Arg Ile Ile Arg Tyr Phe Tyr Asn Ala Lys Ala Gly Leu Cys Gln Thr
 20 25 30

Phe Val Tyr Gly Gly Ala Arg Ala Lys Arg Asn Asn Phe Lys Ser Ala
 35 40 45

Glu Asp Cys Met Arg Thr Cys Gly Gly Ala
 50 55

<210> 90
 <211> 67
 <212> PRT
 <213> Bos taurus

<400> 90

Phe Gln Thr Pro Pro Asp Leu Cys Gln Leu Pro Gln Ala Arg Gly Pro
 1 5 10 15

Cys Lys Ala Ala Leu Leu Arg Tyr Phe Tyr Asn Ser Thr Ser Asn Ala
 20 25 30

Cys Glu Pro Phe Thr Tyr Gly Gly Cys Gln Gly Asn Asn Asn Asn Phe
 35 40 45

Glu Thr Thr Glu Met Cys Leu Arg Ile Cys Glu Pro Pro Gln Gln Thr
 50 55 60

Asp Lys Ser
 65

<210> 91
 <211> 60
 <212> PRT
 <213> Bos Taurus

<400> 91

Thr Glu Arg Pro Asp Phe Cys Leu Glu Pro Pro Tyr Thr Gly Pro Cys
 1 5 10 15

Lys Ala Ala Met Ile Arg Tyr Phe Tyr Asn Ala Lys Ala Gly Phe Cys
 20 25 30

Glu Thr Phe Val Tyr Gly Gly Cys Arg Ala Lys Ser Asn Asn Phe Lys
 35 40 45

Ser Ala Glu Asp Cys Met Arg Thr Cys Gly Gly Ala
 50 55 60

<210> 92
 <211> 58

<212> PRT
 <213> Artificial Sequence

<220>
 <223> Semisynthetic BPTI, TSCH87

<400> 92

Arg Pro Asp Phe Cys Leu Glu Pro Pro Tyr Thr Gly Pro Cys Val Ala
 1 5 10 15

Arg Ile Ile Arg Tyr Phe Tyr Asn Ala Lys Ala Gly Leu Cys Gln Thr
 20 25 30

Phe Val Tyr Gly Gly Cys Arg Ala Lys Arg Asn Asn Phe Lys Ser Ala
 35 40 45

Glu Asp Cys Met Arg Thr Cys Gly Gly Ala
 50 55

<210> 93
 <211> 58
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Semisynthetic BPTI, TSCH87

<400> 93

Arg Pro Asp Phe Cys Leu Glu Pro Pro Tyr Thr Gly Pro Cys Gly Ala
 1 5 10 15

Arg Ile Ile Arg Tyr Phe Tyr Asn Ala Lys Ala Gly Leu Cys Gln Thr
 20 25 30

Phe Val Tyr Gly Gly Cys Arg Ala Lys Arg Asn Asn Phe Lys Ser Ala
 35 40 45

Glu Asp Cys Met Arg Thr Cys Gly Gly Ala
 50 55

<210> 94
 <211> 58
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Semisynthetic BPTI, TSCH87

<400> 94

Arg Pro Asp Phe Cys Leu Glu Pro Pro Tyr Thr Gly Pro Cys Ala Ala
 1 5 10 15

Arg Ile Ile Arg Tyr Phe Tyr Asn Ala Lys Ala Gly Leu Cys Gln Thr
 20 25 30

Phe Val Tyr Gly Gly Cys Arg Ala Lys Arg Asn Asn Phe Lys Ser Ala
 35 40 45

Glu Asp Cys Met Arg Thr Cys Gly Gly Ala
 50 55

<210> 95

<211> 58

<212> PRT

<213> Artificial Sequence

<220>

<223> Semisynthetic BPTI, TSCH87

<400> 95

Arg Pro Asp Phe Cys Leu Glu Pro Pro Tyr Thr Gly Pro Cys Leu Ala
 1 5 10 15

Arg Ile Ile Arg Tyr Phe Tyr Asn Ala Lys Ala Gly Leu Cys Gln Thr
 20 25 30

Phe Val Tyr Gly Gly Cys Arg Ala Lys Arg Asn Asn Phe Lys Ser Ala
 35 40 45

Glu Asp Cys Met Arg Thr Cys Gly Gly Ala
 50 55

<210> 96

<211> 58

<212> PRT

<213> Artificial Sequence

<220>

<223> Semisynthetic BPTI, TSCH87

<400> 96

Arg Pro Asp Phe Cys Leu Glu Pro Pro Tyr Thr Gly Pro Cys Ile Ala
 1 5 10 15

Arg Ile Ile Arg Tyr Phe Tyr Asn Ala Lys Ala Gly Leu Cys Gln Thr
 20 25 30

Phe Val Tyr Gly Gly Cys Arg Ala Lys Arg Asn Asn Phe Lys Ser Ala
 35 40 45

Glu Asp Cys Met Arg Thr Cys Gly Gly Ala
 50 55

<210> 97
 <211> 58
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Engineered BPTI, AUER87

<400> 97

Arg Pro Asp Phe Cys Leu Glu Pro Pro Tyr Thr Gly Pro Cys Lys Ala
 1 5 10 15

Arg Ile Ile Arg Tyr Phe Tyr Asn Ala Lys Ala Gly Leu Cys Gln Thr
 20 25 30

Phe Val Tyr Gly Gly Cys Arg Ala Lys Arg Asn Asn Phe Lys Ser Ala
 35 40 45

Glu Asp Cys Glu Arg Thr Cys Gly Gly Ala
 50 55

<210> 98
 <211> 60
 <212> PRT
 <213> Dendroaspis polylepis polylepis

<400> 98

Gln Pro Leu Arg Lys Leu Cys Ile Leu His Arg Asn Pro Gly Arg Cys
 1 5 10 15

Tyr Gln Lys Ile Pro Ala Phe Tyr Tyr Asn Gln Lys Lys Lys Gln Cys
 20 25 30

Glu Gly Phe Thr Trp Ser Gly Cys Gly Gly Asn Ser Asn Arg Phe Lys
 35 40 45

Thr Ile Glu Glu Cys Arg Arg Thr Cys Ile Arg Lys

50

55

60

<210> 99
 <211> 57
 <212> PRT
 <213> Dendroaspis polylepis polylepis
 <400> 99

Ala Ala Lys Tyr Cys Lys Leu Pro Leu Arg Ile Gly Pro Cys Lys Arg
 1 5 10 15

Lys Ile Pro Ser Phe Tyr Tyr Lys Trp Lys Ala Lys Gln Cys Leu Pro
 20 25 30

Phe Asp Tyr Ser Gly Cys Gly Gly Asn Ala Asn Arg Phe Lys Thr Ile
 35 40 45

Glu Glu Cys Arg Arg Thr Cys Val Gly
 50 55

<210> 100
 <211> 57
 <212> PRT
 <213> Hemachatus hemachates

<400> 100

Arg Pro Asp Phe Cys Glu Leu Pro Ala Glu Thr Gly Leu Cys Lys Ala
 1 5 10 15

Tyr Ile Arg Ser Phe His Tyr Asn Leu Ala Ala Gln Gln Cys Leu Gln
 20 25 30

Phe Ile Tyr Gly Gly Cys Gly Gly Asn Ala Asn Arg Phe Lys Thr Ile
 35 40 45

Asp Glu Cys Arg Arg Thr Cys Val Gly
 50 55

<210> 101
 <211> 57
 <212> PRT
 <213> Naja nivea

<400> 101

Arg Pro Arg Phe Cys Glu Leu Pro Ala Glu Thr Gly Leu Cys Lys Ala
 1 5 10 15

Arg Ile Arg Ser Phe His Tyr Asn Arg Ala Ala Gln Gln Cys Leu Glu
 20 25 30

Phe Ile Tyr Gly Gly Cys Gly Gly Asn Ala Asn Arg Phe Lys Thr Ile
 35 40 45

Asp Glu Cys His Arg Thr Cys Val Gly
 50 55

<210> 102
 <211> 60
 <212> PRT
 <213> Vipera russelli

<400> 102

His Asp Arg Pro Thr Phe Cys Asn Leu Pro Pro Glu Ser Gly Arg Cys
 1 5 10 15

Arg Gly His Ile Arg Arg Ile Tyr Tyr Asn Leu Glu Ser Asn Lys Cys
 20 25 30

Lys Val Phe Phe Tyr Gly Gly Cys Gly Gly Asn Ala Asn Asn Phe Glu
 35 40 45

Thr Arg Asp Glu Cys Arg Glu Thr Cys Gly Gly Lys
 50 55 60

<210> 103
 <211> 64
 <212> PRT
 <213> Caretta sp.

<400> 103

Glx Gly Asp Lys Arg Asp Ile Cys Arg Leu Pro Pro Glu Gln Gly Pro
 1 5 10 15

Cys Lys Gly Arg Leu Pro Arg Tyr Phe Tyr Asn Pro Ala Ser Arg Met
 20 25 30

Cys Glu Ser Phe Ile Tyr Gly Gly Cys Lys Gly Asn Lys Asn Asn Phe
 35 40 45

Lys Thr Lys Ala Glu Cys Val Arg Ala Cys Arg Pro Pro Glu Arg Pro
 50 55 60

<210> 104
 <211> 58
 <212> PRT
 <213> *Helix pomatia*

<400> 104

Glx Gly Arg Pro Ser Phe Cys Asn Leu Pro Ala Glu Thr Gly Pro Cys
 1 5 10 15

Lys Ala Ser Ile Arg Gln Tyr Tyr Tyr Asn Ser Lys Ser Gly Gly Cys
 20 25 30

Gln Gln Phe Ile Tyr Gly Gly Cys Arg Gly Asn Gln Asn Arg Phe Asp
 35 40 45

Thr Thr Gln Gln Cys Gln Gly Val Cys Val
 50 55

<210> 105
 <211> 57
 <212> PRT
 <213> *Dendroaspis angusticeps*

<400> 105

Ala Ala Lys Tyr Cys Lys Leu Pro Val Arg Tyr Gly Pro Cys Lys Lys
 1 5 10 15

Lys Phe Pro Ser Phe Tyr Tyr Asn Trp Lys Ala Lys Gln Cys Leu Pro
 20 25 30

Phe Asn Tyr Ser Gly Cys Gly Gly Asn Ala Asn Arg Phe Lys Thr Ile
 35 40 45

Glu Glu Cys Arg Arg Thr Cys Val Gly
 50 55

<210> 106
 <211> 59
 <212> PRT
 <213> *Dendroaspis angusticeps*

<400> 106

Glx Pro Arg Arg Lys Leu Cys Ile Leu His Arg Asn Pro Gly Arg Cys
 1 5 10 15

Tyr Asp Lys Ile Pro Ala Phe Tyr Tyr Asn Gln Lys Lys Lys Gln Cys
 20 25 30

Glu Arg Phe Asp Trp Ser Gly Cys Gly Gly Asn Ser Asn Arg Phe Lys
 35 40 45

Thr Ile Glu Glu Cys Arg Arg Thr Cys Ile Gly
 50 55

<210> 107

<211> 57

<212> PRT

<213> Dendroaspis polylepis polylepis

<400> 107

Arg Pro Tyr Ala Cys Glu Leu Ile Val Ala Ala Gly Pro Cys Met Phe
 1 5 10 15

Phe Ile Ser Ala Phe Tyr Tyr Ser Lys Gly Ala Asn Lys Cys Tyr Pro
 20 25 30

Phe Thr Tyr Ser Gly Cys Arg Gly Asn Ala Asn Arg Phe Lys Thr Ile
 35 40 45

Glu Glu Cys Arg Arg Thr Cys Val Val
 50 55

<210> 108

<211> 59

<212> PRT

<213> Dendroaspis polylepis polylepis

<400> 108

Leu Gln His Arg Thr Phe Cys Lys Leu Pro Ala Glu Pro Gly Pro Cys
 1 5 10 15

Lys Ala Ser Ile Pro Ala Phe Tyr Tyr Asn Trp Ala Ala Lys Lys Cys
 20 25 30

Gln Leu Phe His Tyr Gly Gly Cys Lys Gly Asn Ala Asn Arg Phe Ser
 35 40 45

Thr Ile Glu Lys Cys Arg His Ala Cys Val Gly
 50 55

<210> 109
 <211> 61
 <212> PRT
 <213> Vipera ammodytes

<400> 109

Glx Asp His Pro Lys Phe Cys Tyr Leu Pro Ala Asp Pro Gly Arg Cys
 1 5 10 15

Lys Ala His Ile Pro Arg Phe Tyr Tyr Asp Ser Ala Ser Asn Lys Cys
 20 25 30

Asn Lys Phe Ile Tyr Gly Gly Cys Pro Gly Asn Ala Asn Asn Phe Lys
 35 40 45

Thr Trp Asp Glu Cys Arg Gln Thr Cys Gly Ala Ser Ala
 50 55 60

<210> 110
 <211> 62
 <212> PRT
 <213> Vipera ammodytes

<400> 110

Arg Asp Arg Pro Lys Phe Cys Tyr Leu Pro Ala Asp Pro Gly Arg Cys
 1 5 10 15

Leu Ala Tyr Met Pro Arg Phe Tyr Tyr Asn Pro Ala Ser Asn Lys Cys
 20 25 30

Glu Lys Phe Ile Tyr Gly Gly Cys Arg Gly Asn Ala Asn Asn Phe Lys
 35 40 45

Thr Trp Asp Glu Cys Arg His Thr Cys Val Ala Ser Gly Ile
 50 55 60

<210> 111
 <211> 62
 <212> PRT
 <213> Bungarus fasciatus

<400> 111

Lys Asn Arg Pro Thr Phe Cys Asn Leu Leu Pro Glu Thr Gly Arg Cys
 1 5 10 15

Asn Ala Leu Ile Pro Ala Phe Tyr Tyr Asn Ser His Leu His Lys Cys
 20 25 30

Gln Lys Phe Asn Tyr Gly Gly Cys Gly Gly Asn Ala Asn Asn Phe Lys
 35 40 45

Thr Ile Asp Glu Cys Gln Arg Thr Cys Ala Ala Lys Tyr Gly
 50 55 60

<210> 112

<211> 59

<212> PRT

<213> Anemonia sulcata

<400> 112

Ile Asn Gly Asp Cys Glu Leu Pro Lys Val Val Gly Pro Cys Arg Ala
 1 5 10 15

Arg Phe Pro Arg Tyr Tyr Tyr Asn Ser Ser Ser Lys Arg Cys Glu Lys
 20 25 30

Phe Ile Tyr Gly Gly Cys Gly Gly Asn Ala Asn Asn Phe His Thr Leu
 35 40 45

Glu Glu Cys Glu Lys Val Cys Gly Val Arg Ser
 50 55

<210> 113

<211> 56

<212> PRT

<213> Homo sapiens

<400> 113

Lys Glu Asp Ser Cys Gln Leu Gly Tyr Ser Ala Gly Pro Cys Met Gly
 1 5 10 15

Met Thr Ser Arg Tyr Phe Tyr Asn Gly Thr Ser Met Ala Cys Glu Thr
 20 25 30

Phe Gln Tyr Gly Gly Cys Met Gly Asn Gly Asn Asn Phe Val Thr Glu
 35 40 45

Lys Glu Cys Leu Gln Thr Cys Arg
 50 55

<210> 114
 <211> 61
 <212> PRT
 <213> Homo sapiens

<400> 114

Thr Val Ala Ala Cys Asn Leu Pro Val Ile Arg Gly Pro Cys Arg Ala
 1 5 10 15

Phe Ile Gln Leu Trp Ala Phe Asp Ala Val Lys Gly Lys Cys Val Leu
 20 25 30

Phe Pro Tyr Gly Gly Cys Gln Gly Asn Gly Asn Lys Phe Tyr Ser Glu
 35 40 45

Lys Glu Cys Arg Glu Tyr Cys Gly Val Pro Gly Asp Glu
 50 55 60

<210> 115
 <211> 60
 <212> PRT
 <213> Bungarus multicinctus

<400> 115

Arg Gln Arg His Arg Asp Cys Asp Lys Pro Pro Asp Lys Gly Asn Cys
 1 5 10 15

Gly Pro Val Arg Ala Phe Tyr Tyr Asp Thr Arg Leu Lys Thr Cys Lys
 20 25 30

Ala Phe Gln Tyr Arg Gly Cys Asp Gly Asp His Gly Asn Phe Lys Thr
 35 40 45

Glu Thr Leu Cys Arg Cys Glu Cys Leu Val Tyr Pro
 50 55 60

<210> 116
 <211> 60
 <212> PRT
 <213> Bungarus multicinctus

<400> 116

Arg Lys Arg His Pro Asp Cys Asp Lys Pro Pro Asp Thr Lys Ile Cys
 1 5 10 15

Gln Thr Val Arg Ala Phe Tyr Tyr Lys Pro Ser Ala Lys Arg Cys Val

20

25

30

Gln Phe Arg Tyr Gly Gly Cys Asp Gly Asp His Gly Asn Phe Lys Ser
 35 40 45

Asp His Leu Cys Arg Cys Glu Cys Glu Leu Tyr Arg
 50 55 60

<210> 117
 <211> 58
 <212> PRT
 <213> Bos taurus

<400> 117

Arg Pro Asp Phe Cys Leu Glu Pro Pro Tyr Thr Gly Pro Cys Lys Ala
 1 5 10 15

Lys Met Ile Arg Tyr Phe Tyr Asn Ala Lys Ala Gly Phe Cys Glu Thr
 20 25 30

Phe Val Tyr Gly Gly Cys Lys Ala Lys Ser Asn Asn Phe Arg Ser Ala
 35 40 45

Glu Asp Cys Met Arg Thr Cys Gly Gly Ala
 50 55

<210> 118
 <211> 61
 <212> PRT
 <213> Tachypleus tridentatus

<400> 118

Thr Glu Arg Gly Phe Leu Asp Cys Thr Ser Pro Pro Val Thr Gly Pro
 1 5 10 15

Cys Arg Ala Gly Phe Lys Arg Tyr Asn Tyr Asn Thr Arg Thr Lys Gln
 20 25 30

Cys Glu Pro Phe Lys Tyr Gly Gly Cys Lys Gly Asn Gly Asn Arg Tyr
 35 40 45

Lys Ser Glu Gln Asp Cys Leu Asp Ala Cys Ser Gly Phe
 50 55 60

<210> 119

<211> 63
 <212> PRT
 <213> Bombyx mori

<400> 119

Asp Glu Pro Thr Thr Asp Leu Pro Ile Cys Glu Gln Ala Phe Gly Asp
 1 5 10 15

Ala Gly Leu Cys Phe Gly Tyr Met Lys Leu Tyr Ser Tyr Asn Gln Glu
 20 25 30

Thr Lys Asn Cys Glu Glu Phe Ile Tyr Gly Gly Cys Gln Gly Asn Asp
 35 40 45

Asn Arg Phe Ser Thr Leu Ala Glu Cys Glu Gln Lys Cys Ile Asn
 50 55 60

<210> 120
 <211> 56
 <212> PRT
 <213> Bos taurus

<400> 120

Lys Ala Asp Ser Cys Gln Leu Asp Tyr Ser Gln Gly Pro Cys Leu Gly
 1 5 10 15

Leu Phe Lys Arg Tyr Phe Tyr Asn Gly Thr Ser Met Ala Cys Glu Thr
 20 25 30

Phe Leu Tyr Gly Gly Cys Met Gly Asn Leu Asn Asn Phe Leu Ser Gln
 35 40 45

Lys Glu Cys Leu Gln Thr Cys Arg
 50 55

<210> 121
 <211> 61
 <212> PRT
 <213> Bos taurus

<400> 121

Thr Val Glu Ala Cys Asn Leu Pro Ile Val Gln Gly Pro Cys Arg Ala
 1 5 10 15

Phe Ile Gln Leu Trp Ala Phe Asp Ala Val Lys Gly Lys Cys Val Arg
 20 25 30

Pro Phe Val Tyr Gly Gly Cys Arg Ala Lys Ser Asn Asn Phe Lys Ser
35 40 45

Ala Glu Asp Cys Met Arg Thr Cys Gly Gly Ala
50 55

<210> 124
<211> 58
<212> PRT
<213> Artificial Sequence

<220>
<223> Isoaprotinin 2

<400> 124

Arg Pro Asp Phe Cys Leu Glu Pro Pro Tyr Thr Gly Pro Cys Lys Ala
1 5 10 15

Arg Ile Ile Arg Tyr Phe Tyr Asn Ala Lys Ala Gly Leu Cys Gln Pro
20 25 30

Phe Val Tyr Gly Gly Cys Arg Ala Lys Arg Asn Asn Phe Lys Ser Ser
35 40 45

Glu Asp Cys Met Arg Thr Cys Gly Gly Ala
50 55

<210> 125
<211> 58
<212> PRT
<213> Artificial Sequence

<220>
<223> Isoaprotinin G-2

<400> 125

Arg Pro Asp Phe Cys Leu Glu Pro Pro Tyr Thr Gly Pro Cys Lys Ala
1 5 10 15

Arg Met Ile Arg Tyr Phe Tyr Asn Ala Lys Ala Gly Leu Cys Gln Pro
20 25 30

Phe Val Tyr Gly Gly Cys Arg Ala Lys Arg Asn Asn Phe Lys Ser Ala
35 40 45

Glu Asp Cys Met Arg Thr Cys Gly Gly Ala
50 55

<210> 126
<211> 58

<212> PRT
 <213> Artificial Sequence

<220>
 <223> Isoaprotinin 1

<400> 126

Arg Pro Asp Phe Cys Leu Glu Pro Pro Tyr Thr Gly Pro Cys Lys Ala
 1 5 10 15

Lys Met Ile Arg Tyr Phe Tyr Asn Ala Lys Ala Gly Phe Cys Glu Thr
 20 25 30

Phe Val Tyr Gly Gly Cys Lys Ala Lys Ser Asn Asn Phe Arg Ser Ala
 35 40 45

Glu Asp Cys Met Arg Thr Cys Gly Gly Ala
 50 55

<210> 127
 <211> 11
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> PfMI restriction site

<220>
 <221> misc_feature
 <222> (4)..(8)
 <223> n is a, c, g or t

<400> 127
 ccannnnntg g

11

<210> 128
 <211> 15
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> XcmI restriction site

<220>
 <221> misc_feature
 <222> (4)..(12)
 <223> n is a, c, g or t

<400> 128
 ccannnnnnn nntgg

15

<210> 129

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> amino acids 13-21 of EpiNE alpha

<400> 129

Pro Cys Val Ala Met Phe Gln Arg Tyr

1

5